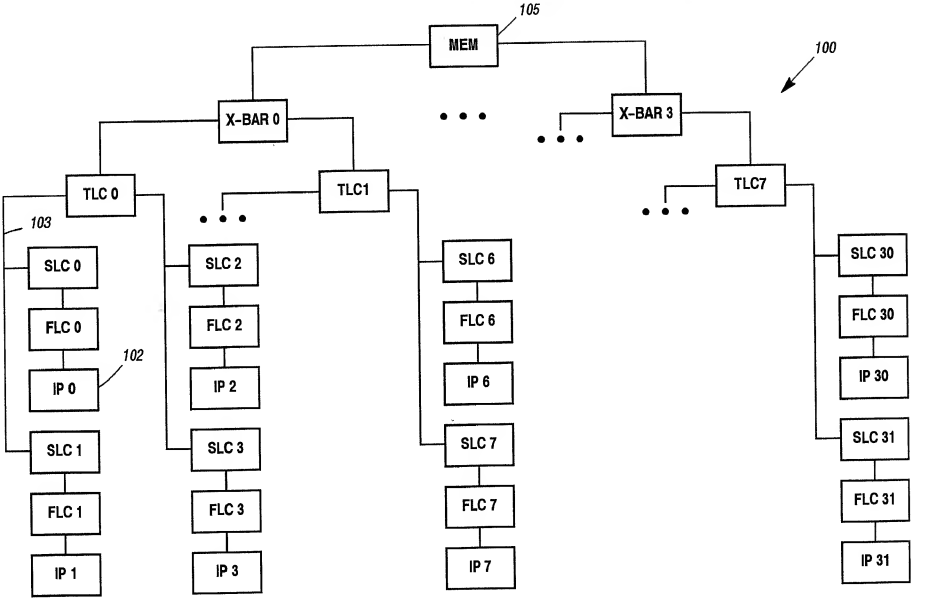
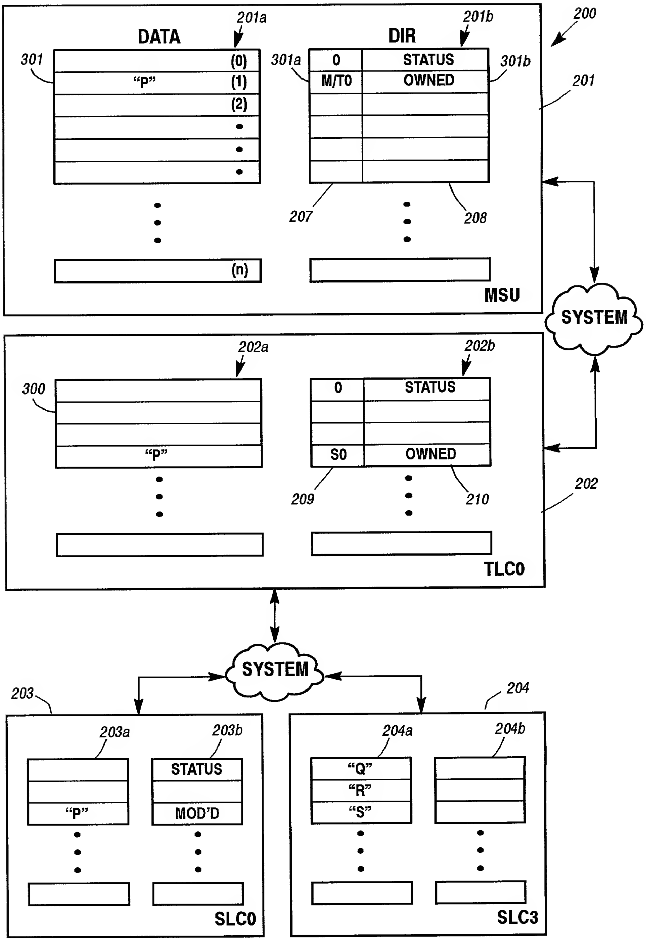


Figure 1



200
201
201a
201b
DATA
DIR
301
"P"
(0)
(1)
(2)
(n)
301a
301b
0
STATUS
M/T0
OWNED
207
208
MSU
SYSTEM
202
202a
202b
300
"P"
0
STATUS
S0
OWNED
209
210
TLC0
SYSTEM
203
203a
203b
"P"
STATUS
MOD'D
SLC0
204
204a
204b
"Q"
"R"
"S"
SLC3

Figure 2

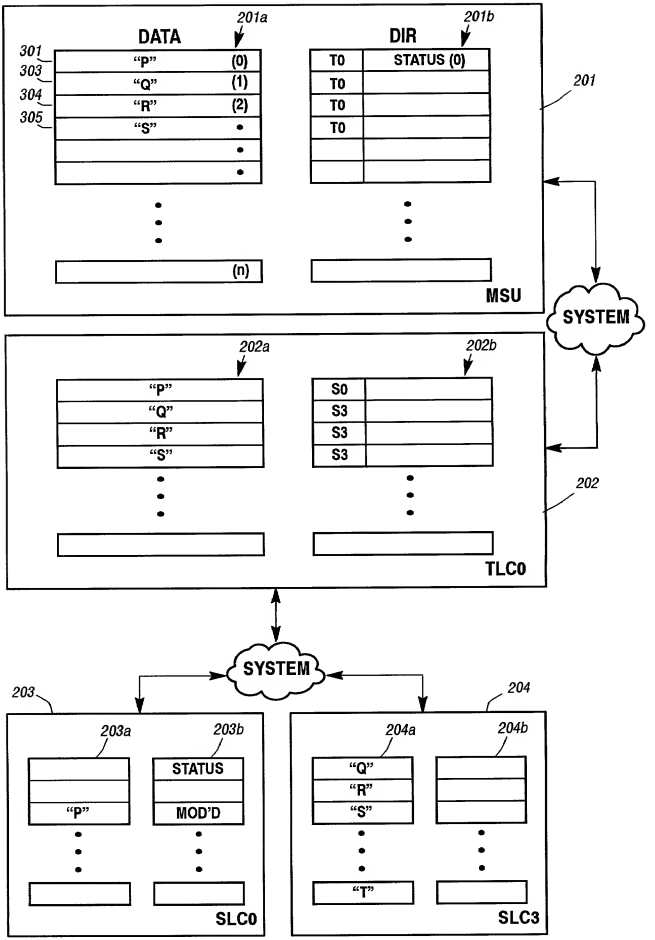


Figure 2A

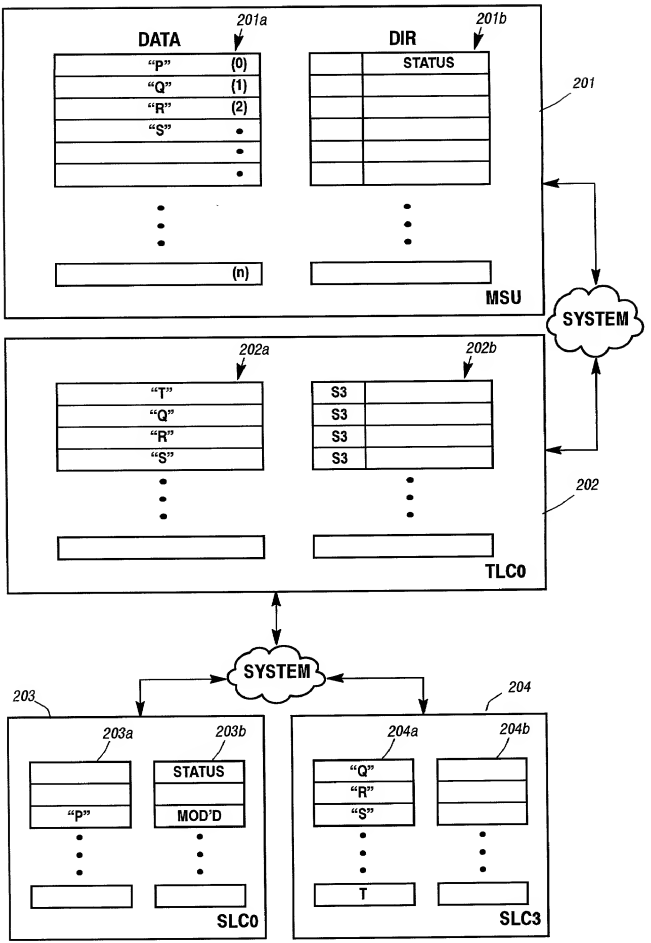


Figure 2B

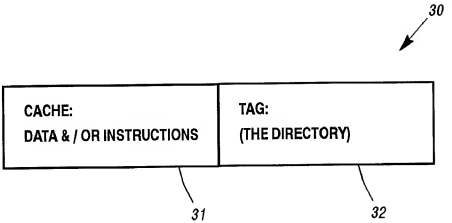


Figure 3

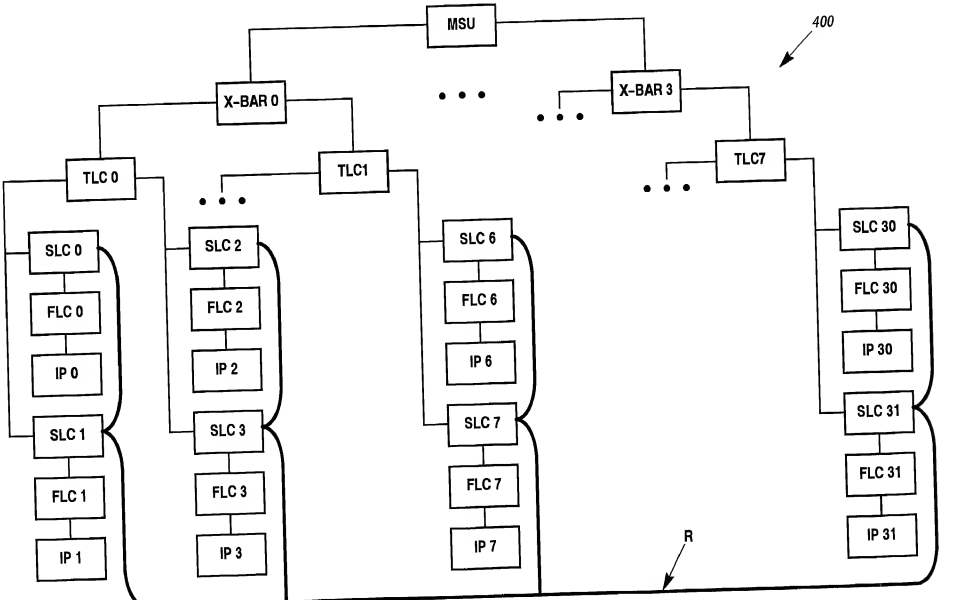


Figure 4

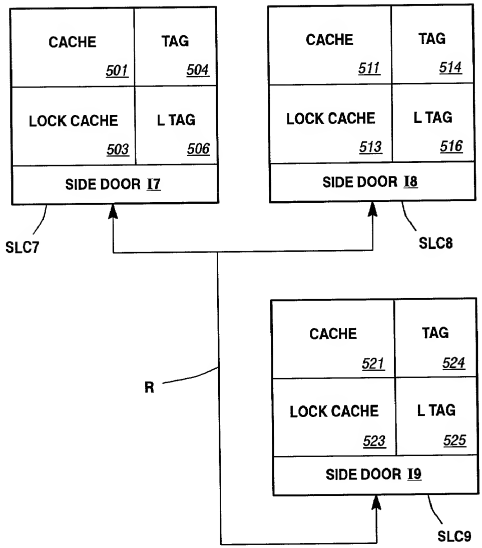

CACHE
501
TAG
504
LOCK CACHE
503
L TAG
506
SIDE DOOR I7
SLC7
CACHE
511
TAG
514
LOCK CACHE
513
L TAG
516
SIDE DOOR I8
SLC8
R
CACHE
521
TAG
524
LOCK CACHE
523
L TAG
525
SIDE DOOR I9
SLC9

Figure 5

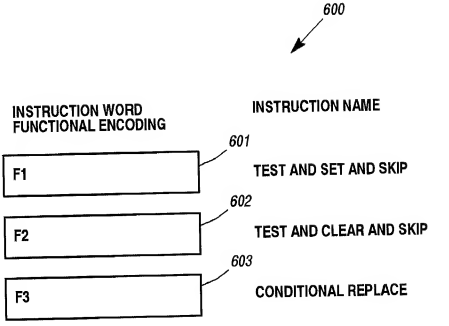


Figure 6

Lock Instructions

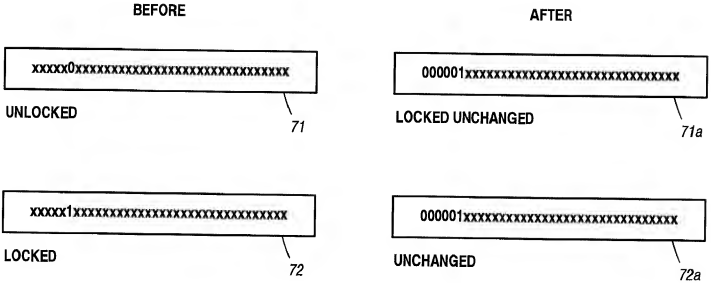


Figure 7

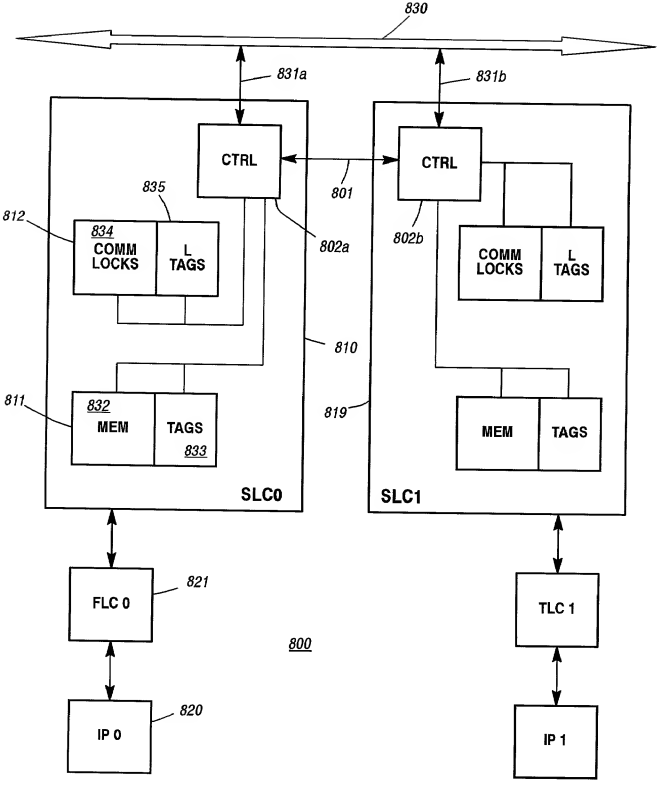


Figure 8A

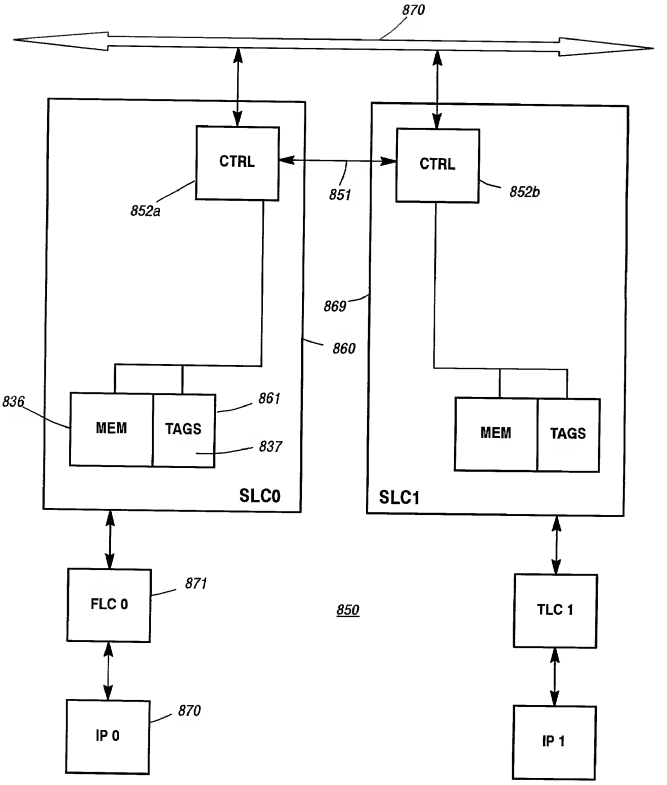


Figure 8B

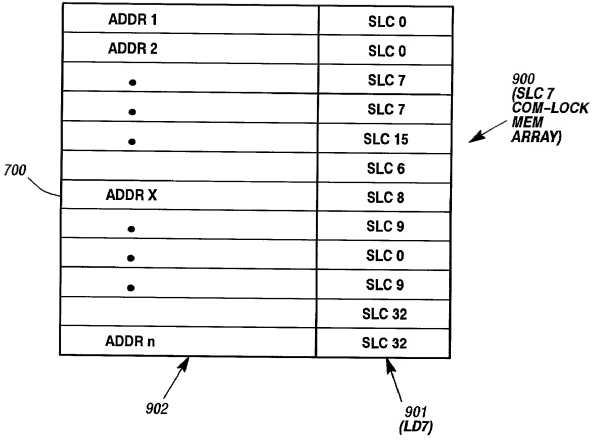


Figure 9

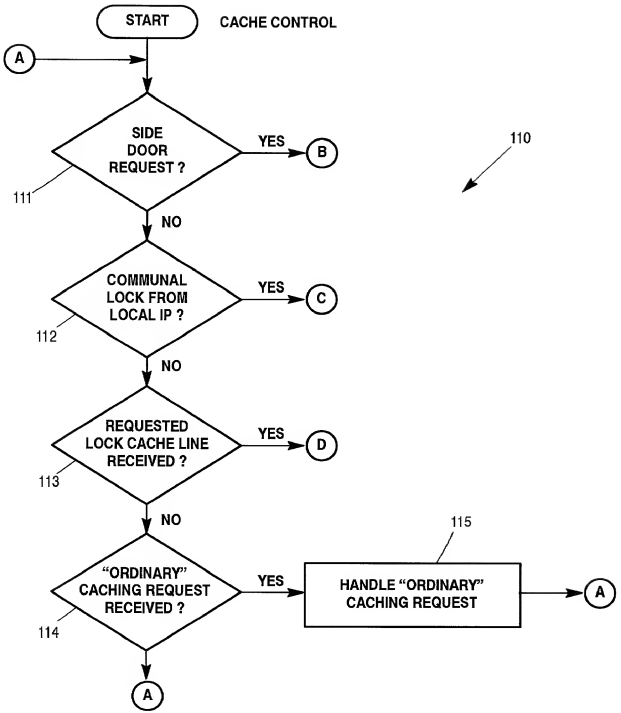

START
CACHE CONTROL
A
SIDE DOOR REQUEST ?
YES
B
111
110
NO
COMMUNAL LOCK FROM LOCAL IP ?
YES
C
112
NO
REQUESTED LOCK CACHE LINE RECEIVED ?
YES
D
113
NO
115
"ORDINARY" CACHING REQUEST RECEIVED ?
YES
HANDLE "ORDINARY" CACHING REQUEST
A
114
A

Figure 10A

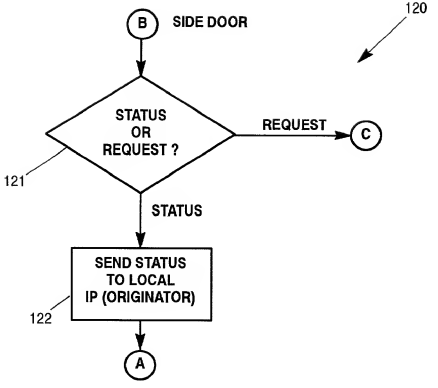


Figure 10B

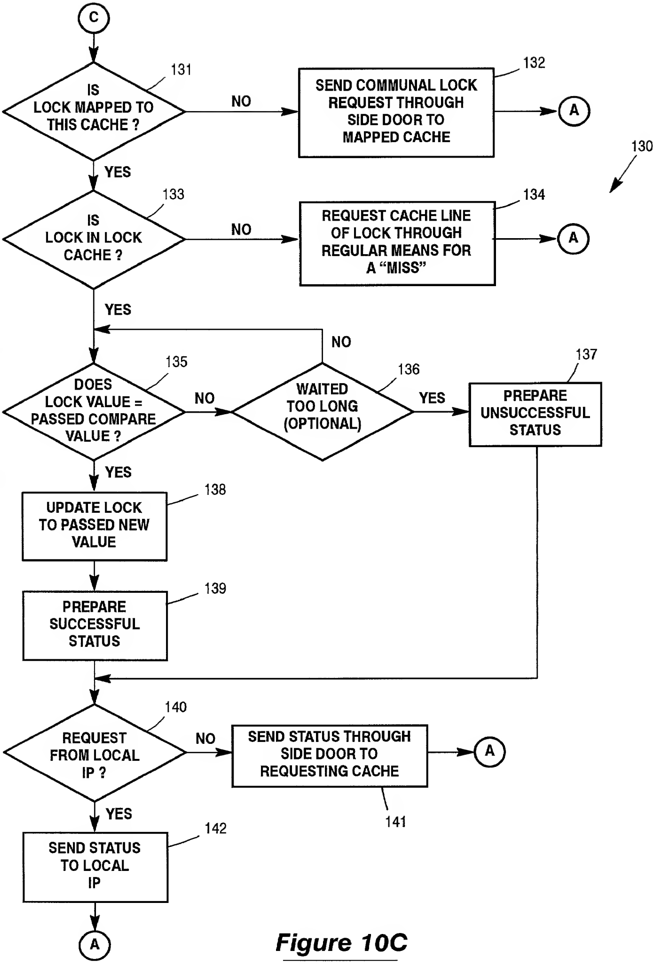

C
IS LOCK MAPPED TO THIS CACHE ?
131
NO
SEND COMMUNAL LOCK REQUEST THROUGH SIDE DOOR TO MAPPED CACHE
132
A
130
YES
IS LOCK IN LOCK CACHE ?
133
NO
REQUEST CACHE LINE OF LOCK THROUGH REGULAR MEANS FOR A "MISS"
134
A
YES
NO
DOES LOCK VALUE = PASSED COMPARE VALUE ?
135
NO
WAITED TOO LONG (OPTIONAL)
136
YES
PREPARE UNSUCCESSFUL STATUS
137
YES
UPDATE LOCK TO PASSED NEW VALUE
138
PREPARE SUCCESSFUL STATUS
139
REQUEST FROM LOCAL IP ?
140
NO
SEND STATUS THROUGH SIDE DOOR TO REQUESTING CACHE
141
A
YES
SEND STATUS TO LOCAL IP
142
A

Figure 10C

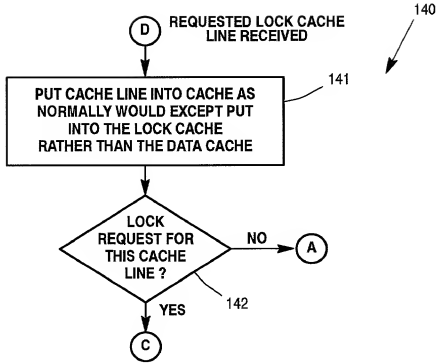


Figure 10D

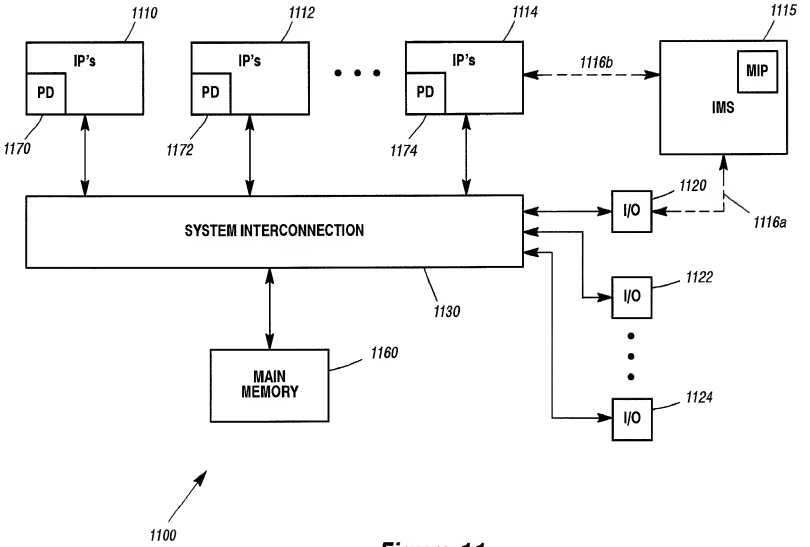


Figure 11

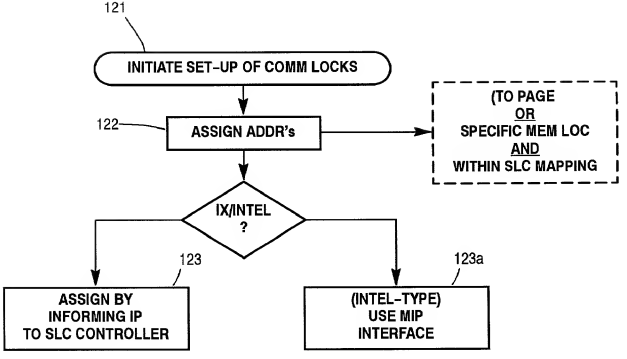
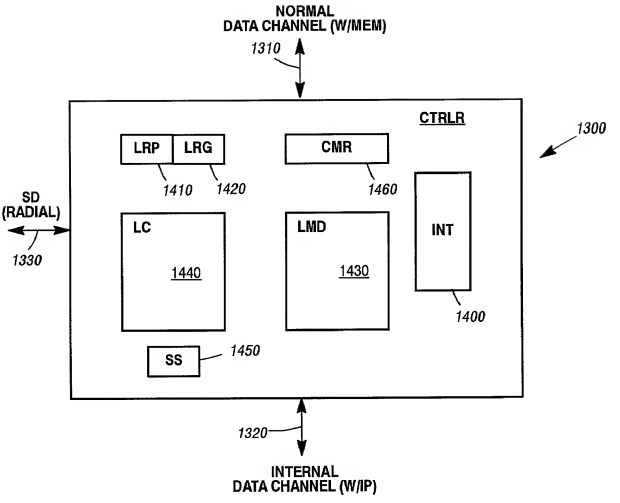


Figure 12



LRG = LOCK REQ. GENERATOR – GENERATES / FORWARDS LOCK REQUEST IF LRP SAYS IT D/N HAVE IT.
LRP = LOCK REQUEST (INSTRUCTION) PROCESSOR (HAS BIT CHANGER & CHECKS LMD & LC TO SEE IF (A) ITS HIS & (B) IF HE HAS IT)
SD = SIDE DOOR (INCLUDES ID INFO PATH)
CMR = COMPARITOR
LMD = LOCK MAP DIRECTORY
LC = LOCK CACHE
INT = INTERPRETER (IS THIS A LOCK REQUEST? ELSE PASS THROUGH AS NORMAL DATA)
SS = STATUS STRIPPER (SENDS BACK LOCK STATUS TO SIDE DOOR WHEN OPERATION COMPLETES IN RESP TO SIDE DOOR REQ)

Figure 13